

REMARKS

Claims 9 and 23 are amended. Claim 10 is cancelled. New claims 60-66 are added. The new claims are supported by the originally-filed application by exemplary embodiments of Applicant's invention at, for example, pages 5 and 7 and Fig. 3. Claims 9, 12, 14, 23-28 and 51-66 remain in the application. Reconsideration of the application in view of the amendments and the remarks to follow is requested.

Claims 9, 10, 12, 14, 51, 52, 55, and 56 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Without admitting to the propriety of the rejection, the language referred to by the Examiner regarding this rejection (pg. 3 of paper no. 23) is deleted from independent claim 9, and therefore, the rejection is rendered moot.

Claims 9, 10, 12, 14, 51, 52, 55, and 56 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Examiner first refers to "comprising only" of claim 9 as being problematic (pg. 4 of paper no. 23). Without admitting to the propriety of the rejection, such language is deleted from claim 9, and therefore, this aspect of the rejection is rendered moot.

Regarding a second aspect of the §112, second paragraph rejection, the Examiner states language of claim 9 is confusing for reciting a silane comprising a silane (presumably referring to "an epoxy terminated silane comprising a glycidoxy methoxy silane") because it is unclear where a distinction is made

between when something is a component or a subcomponent (pg. 4 of paper no. 23). The Examiner is respectfully reminded that MPEP §2173.02 (8th Edition) states definiteness of claim language must be analyzed, not in a vacuum, but in light of:

- (A) the content of the particular application disclosure;
- (B) the teachings of the prior art; and
- (C) **the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.**

MPEP §2173.02 (8th Edition) (emphasis added). Applicant submits that the claims are clear and definite on their face. Moreover, **one of ordinary skill in the art** understands the distinction between an epoxy terminated silane and a glycidoxy methoxy silane, particularly with the opportunity to consider and review the contents of the application disclosure pursuant to the above authority. In fact, MPEP §2173.02 states "some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire." "A fundamental principle contained in 35 U.S.C. 112, second paragraph is that applicants are their own lexicographers [and] [t]hey can define in the claims what they regard as their invention essentially in whatever terms they choose...." MPEP §2173.01 (8th Edition). Under this authority, no reasonable interpretation of the language of claim 9 can be stated to be indefinite or confusing to one skilled in the art, and therefore, this second aspect of the §112, second paragraph rejection is inappropriate and should be withdrawn.

Claims 23-27 and 57-59 stand rejected under 35 U.S.C. §103(a) as being obvious over Chen et al. (4,975,221) in view of Canning et al. (5,783,465). Claims 28 and 53-54 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Chen et al. in view of Canning et al. and further in view of Tuttle (5,558,679).

Independent claim 9 recites providing a curable adhesive composition comprising an epoxy terminated silane, providing first and second electronic components to be conductively connected with one another, and interposing the curable adhesive composition between the first and second electronic components wherein at least one of the components comprises a **nickel containing metal surface** over which the curable adhesive composition is received. The Examiner previously rejected claim 10 (now claim 9) as being obvious over Chen in view of Tsukagoshi, Kropp, or Inoue, and Tuttle (Tsukagoshi, Kropp, or Inoue were presented to teach glycidoxy methoxy silane). The rationale was stated as, one skilled in the art would readily appreciate that it is well known and conventional to electrically interconnect components via an epoxy adhesive wherein one of the electronic components has a surface with metal containing nickel, as shown by Tuttle, and that Chen is a general teaching for interconnecting electronic parts with an epoxy terminated silane (paper no. 19 at page 7; paper no. 23 at page 8). The Examiner continued, it would have been obvious to one of ordinary skill in the art at the time the invention was made to connect an electrical component with a nickel containing metal surface to another electrical component in the

method of Chen, as modified above, as suggested by Tuttle (paper no. 19 at page 7; paper no. 23 at page 8).

In contradiction to the Examiner's above contentions, Applicant now presents herewith a declaration by Rickie Lake, a person skilled in the art, pursuant to 37 C.F.R. §1.132, demonstrating that the Examiner's rationale does not exist. Rickie Lake's declaration demonstrates that at the time of the invention, one of ordinary skill in the art would not have provided a curable adhesive composition comprising an epoxy terminated silane, and interposing the curable adhesive composition between the first and second electronic components wherein at least one of the components comprises a **nickel containing metal surface** as positively recited in claim 9. At the time of the above-referenced invention, a suitable conductive bond or interconnection was not created in spite of the highly conductive nature of a conductive epoxy and a outer battery surface which routinely comprised nickel (paras. 5-7 of declaration). At the time of the above-referenced invention, one skilled in the art did not understand the source of this problem for the poor conduction (paras. 5-7 of declaration). Moreover, as stated in Rickie Lake's declaration, "at the time of the above-referenced invention, silane additives for epoxy were not known to have been utilized within conductive epoxies for electrical bonding of the conductive epoxies with **nickel surfaces** nor for batteries" (para. 7 of declaration). The inventor of the above-referenced application discovered that the source of the problem for poor

conduction was poor wetting characteristics of the conductive epoxy with the nickel containing metal surface of the battery (paras. 5-7 of declaration).

In response to his discovery, Rickie Lake added an epoxy terminated silane to conductive adhesives (para. 7 of declaration). The addition of epoxy terminated silane to conductive adhesives significantly improved the wetting characteristics of the conductive adhesives relative to nickel containing metal surfaces in a manner which was not understood to have been reported or known in the prior art at the time of the above-referenced invention (para. 7 of declaration). Accordingly, **at the time of the above-referenced application, it was not well known and conventional** to include epoxy terminated silanes in conductive adhesives for bonding electrical components to nickel containing metal surfaces or batteries with such surfaces. Additionally, since the source of the poor conduction was not known or understood at the time of the invention, there was no motivation to add epoxy terminated silane to conductive adhesives for bonding electrical components to nickel containing metal surfaces or batteries with such surfaces. Consequently, no fair or reasonable motivational rationale for combining the art of record exists to teach to provide a curable adhesive composition comprising an epoxy terminated silane, and interposing the curable adhesive composition between the first and second electronic components wherein at least one of the components comprises a nickel containing metal surface as positively recited in claim 9. Claim 9 is allowable over the art of record.

Claims 12, 14, 51-52 and 55-56, 60 and 65 depend from independent claim 9, and therefore, are allowable for the reasons discussed above with respect to the independent claim, as well as for their own recited features which are not shown or taught by the art of record.


Regarding independent claim 23, such claim recites interposing a curable epoxy composition between first and second electrically conductive components to be electrically interconnected, at least one of the components comprising a **battery having a metal surface** with which the curable epoxy is to electrically connect. Claim 23 further recites curing the epoxy into an electrically conductive bond electrically interconnecting the first and second components, the epoxy having an effective metal surface **wetting concentration of silane** to form a cured electrical interconnection having a contact resistance through said metal surface of less than or equal to about 0.3 ohm-cm². There is no motivation to combine the art of record to teach the recited limitations of claim 23. As stated in Rickie Lake's declaration, "at the time of the above-referenced invention, **silane additives for epoxy were not known** to have been utilized within conductive epoxies for electrical bonding of the conductive epoxies with nickel surfaces nor for batteries" (para. 7 of declaration). Therefore, no fair or reasonable motivational rationale to combine the art of record can be stated to teach a **battery having a metal surface** with which the curable epoxy is to electrically connect and the epoxy having an effective metal surface **wetting concentration of silane** as positively stated in claim 23. Claim 23 is allowable.

Claims 24-28, 53-54, 57-59, 61-64 and 66 depend from independent claim 23, and therefore, are allowable for the reasons discussed above with respect to the Independent claim, as well as for their own recited features which are not shown or taught by the art of record.

This application is now believed to be in immediate condition for allowance, and action to that end is respectfully requested. If the Examiner's next anticipated action is to be anything other than a Notice of Allowance, the undersigned respectfully requests a telephone interview prior to issuance of any such subsequent action.

Respectfully submitted,

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